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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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DEC 21 1990

Federal Communications Commission
Office of the Secretary

In the Matter of	)	
	)	MM Docket
Request for Rulemaking setting	)	RM -
standards for Aviation Receivers	)	

RM 7610

To: The Commission

PETITION FOR RULEMAKING

Comes now John Furr & Associates, Inc. (hereafter "Petitioner"), pursuant to Section 1.401 of the Commission's Rules, and respectfully requests the Commission to institute a Rulemaking proceeding to set standards for Aviation Receivers that are used for navigation ("Avionics"). In support, the Petitioner offers the following evidence:

1. Petitioner is a communications consultant in San Antonio, Texas. A bulk of the consultation work performed by this company involves FM allocations. More than fifty percent of the FM allocation work has involved conflict with the Federal Aviation Administration's ("FAA") three frequency interference model, resulting in notice of "Hazard" grants from the FAA. Some of the issues are impossible to resolve in terms of dealing with FAA. Presently the FAA regulations relate to FM and TV. It is to be expected that all radio transmission services will be brought work "regulation" by FAA.

2. The concern of the FAA is one of safety of aircraft navigation using Avionics instrumentation. We all share that concern. Members of this firm choose to fly, frequently placing

the safety of our lives on the dependability of the Avionics.

3. The core of the safety concern from the recent FAA action is radio frequency interference ("RFI") to the Avionic receivers. Receivers which have imperfections in the first amplifier circuits can cause the generation of a fourth radio signal when two or three other frequencies are present. This is called "Third Order Intermodulation". It happens within the receiver itself. Poorly designed and constructed receivers are readily susceptible to this mix of signals. If the fourth resulting signal is the same frequency as a navigational transmitter, it may disrupt the system or give false information to the pilot.

4. The FAA has approached protection for Avionics by creating a computer program to calculate the levels of proposed new transmission signals and the potential of these to cause this receiver generated interference. If the computer program calculates new levels of mix signals, based on a standard they have created, they issue a "Hazard to Navigation" which will prevent the structure from being built and thus the transmitter from operating. This standard is based on the "worst case" Avionics available for aircraft, few of which are in service.

5. The Petitioner believes there is a superior method to protect Avionics from this type of interference. This can be achieved by using improved amplifier components and/or placing filter devices on the Avionics input that would attenuate the mixing frequencies but not the desired frequency. Since most receivers already deliver safe service in these supposed

"interference areas", the cost of upgrading a few bad receivers will not impose an undue burden on aviation. This petition asks the Commission to set standards for the manufacture and use of Avionics thereby resolving the safety issues by this means.

6. The Petitioner has a copy of the FAA model used to calculate the potential interferences. We performed numerous tests on Instrument Landing Systems ("ILS") using major airports in the United States. The results show that many airports are covered completely with prohibitive interference according to the FAA model. Some airports we researched had no NOTAMS (Notice to Airmen) regarding possible radio interference. The safety record of the Aviation Industry will quickly reveal the lack of disasters relating to malfunction of Avionics because of FM broadcast signal mixes. This is prima-facia evidence that the Aviation Industry already uses Avionics that are superior to the "worst case" equipment tested by the FAA and the vast majority of present equipment would easily pass standards the FCC would set.

7. The costs of the FAA method (regulating FM transmitters) to the broadcasting community is enormous. Almost every one of our clients who have experienced conflict with the FAA RFI model has had to spend more than $10,000 seeking resolution. One client has been out nearly $150,000 (legal fees, consulting fees, and delay costs) and a year of negotiations to receive a construction permit. As shown in the paragraphs above, the cost to the Aviation Industry would be minimal. In numerous cases, no accommodation can be reached with the FAA, thereby needlessly depriving communities

of new or improved broadcast services and the economic activity they create.

8. By regulating the standards of the receivers, the Aviation Industry can be assured of reliable navigation equipment at all times in all environments at a reasonable cost to upgrade the few inferior receivers still in operation. Large portions of the United States are border areas. Many airplanes fly across the borders into Canada and Mexico. The FAA method of limiting transmitters rather than receivers offers no Avionic protection in these geographical areas.

9. The Communications Act of 1934 empowers the FCC to regulate the Radio Frequency spectrum. The FCC has the authority to regulate receivers as well as transmitters.

CONCLUSION

The Commission is requested to establish standards for Avionics that will have third order rejection characteristics that will insure reliable service in all present and expected future RF environments experienced by aircraft. This action is in the public interest for the following reasons:

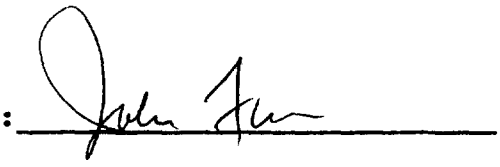
- Aviation navigational equipment will be more dependable within the US, border areas, and over foreign territory, as well as existing domestic areas of RFI.

- More transmitter sites will be available to adjust to urban growth experienced in most major communities and therefore more persons will be served by the various services.

- Costly delays, consultation, and burdensome legal proceedings in securing permits for all transmitter operations can be avoided.

Accordingly, for the foregoing reasons, the Petitioner requests that the Petition for Rulemaking be granted and that the Commission initiate the requested Rulemaking.

Respectfully submitted, JOHN FURR & ASSOCIATES, INC.

December 18, 1990 By: 

John R. Furr, President